# Practical Tips and Trends in RCRA Implementation

Solid & Hazardous Waste Management, Disposal & Transportation

Workshop DD



# **MEET YOUR PRESENTERS**



RAJIB SINHA, PE Senior Engineer/Regional Initiatives Manager Trihydro Corporation Cincinnati, Ohio





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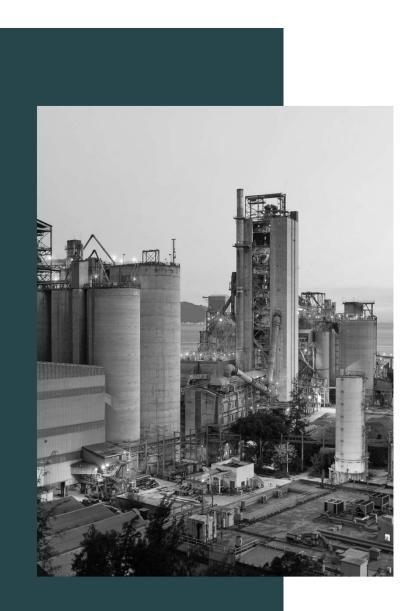
Environmental, Health and Safety Manager Navistar Springfield Assembly Plant





ANITA DECINA VP of Operational Safety & Environmental Excellence Heritage-Crystal Clean, LLC





# **COURSE OBJECTIVES**



Very Brief Overview Of Hazardous Waste Regulations



**Implementation At Your Facility** 



What's New



# **TOP WASTE VIOLATIONS**

- **1.** Waste Identification
- 2. Satellite Management & Waste Storage Area
- **3.** Labeling Issues
- 4. Training
- **5.** Emergency Planning
- 6. Incorrect Generator Status
- 7. Container Management
- 8. Return On Manifests/E-manifest





# HAZARDOUS WASTE REGULATIONS

Presented in depth at another Session in this Conference

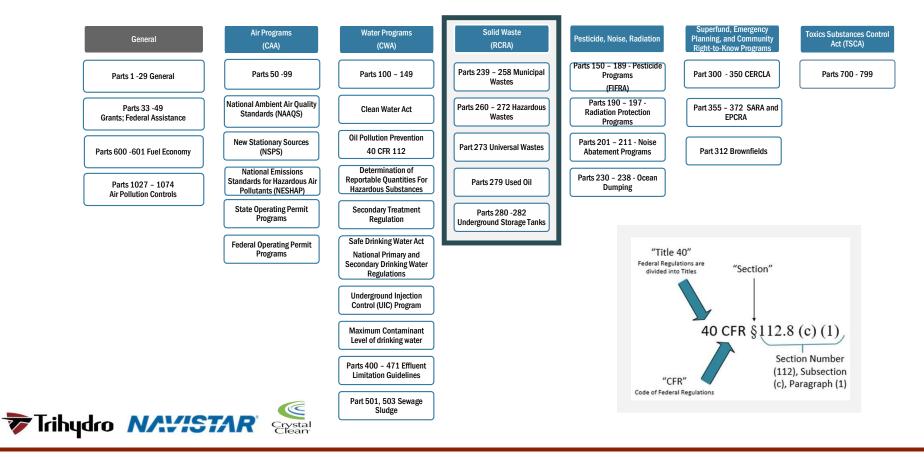
# RESOURCE CONSERVATION RECOVERY ACT

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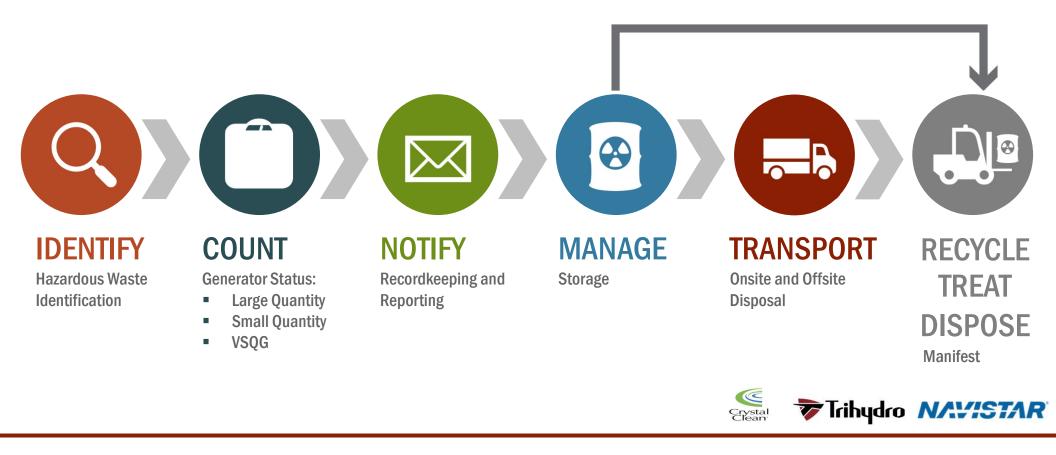
- Generation
- Treatment
- Storage
- Disposal
- Transportation
- Recycling
- Reclamation
- Import/Export

# **CODE OF FEDERAL REGULATIONS (CFR) – TITLE 40**

SUBCHAPTER I - SOLID WASTES (PARTS 239 - 282) BASED ON THE RESOURCE CONSERVATION AND RECOVERY ACT (RCRA)



## COMPLYING WITH HAZARDOUS WASTE REGULATIONS



# WASTE IDENTIFICATION

- **STEP 1:** Determine that a material is a <u>waste</u>.
- STEP 2: Determine that the waste is a <u>solid waste</u> and is not excluded from the definitions of solid or hazardous waste.
- STEP 3: Determine if the waste is a hazardous waste.
- STEP 4: Determine if the waste is a <u>listed hazardous</u> <u>waste</u>. Four lists: F list P List K list U List
- STEP 5: Determine if the waste is a <u>characteristic</u> <u>hazardous waste</u>: D List

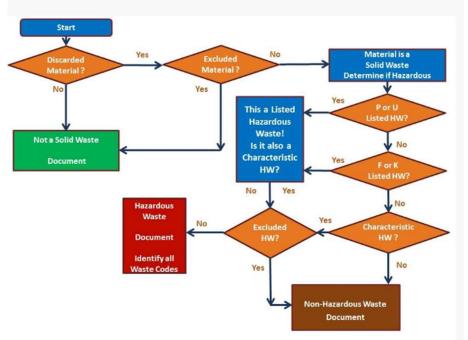


Image retrieved from TNDEC:

https://www.tn.gov/environment/program-areas/solid-waste/hazardous-waste-management/hw-determination-matrix/access-flow-chart.html





# IDENTIFYING WASTES AT YOUR FACILITY

- Purchasing records and SDSs
  - Identify what is being purchased and be familiar with the chemical components and composition
- Facility walk-through
  - Observe discarded material
- Sampling and analysis of unknown waste streams
  - E.g., paint booth filters, oil/water sludge
- Review waste profiles for past shipped wastes



# WASTES THAT ARE <u>NOT</u> SOLID WASTE

- 25 Categories excluded [40 CFR 261.4(a)(1) - (27)]
- Examples:
  - Excluded Scrap Metal
  - Used Cathode Ray Tubes
  - Solvent-contaminated Rags

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 Material that is remanufactured

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Domestic Sewage and Mixtures of Domestic Sewage
Point Source Discharge
Irrigation Return Flow
Radioactive Waste
In-Situ Mining
Pulping Liquors
Spent Sulfuric Acid
Reclamation in Enclosed Tanks
Spent Wood Preservatives
Coke By-Product Wastes
Splash Condenser Dross Residue
Hazardous Secondary Materials From the Petroleum Refining Industry
Excluded Scrap Metal
Shredded Circuit Boards
Pulping Condensates Derived from Kraft Mill Steam Strippers
Spent materials generated within the primary mineral processing industry from which minerals, acids, cyanide, water, or other values are recovered by mineral processing or by beneficiation
Petrochemical recovered oil from an associated organic chemical manufacturing facility
Spent caustic solutions from petroleum refining liquid treating processes used as a feedstock to produce cresylic or naphthenic acid
Hazardous secondary materials used to make zinc fertilizers
Zinc fertilizers made from hazardous wastes, or excluded hazardous secondary materials
Used cathode ray tubes (CRTs)
Hazardous secondary material generated and legitimately reclaimed within the United States or its territories and under the control of the generator
Hazardous secondary material that is generated and then transferred for the purpose of reclamation is not a solid waste
Solvent-contaminated wipes that are sent for cleaning and reuse are not solid wastes from the point of generation
Hazardous secondary material that is generated and then transferred to another person for the purpose of remanufacturing is not a solid waste

## SOLID WASTES EXCLUDED FROM HAZARDOUS WASTE REGULATIONS

- 17 Categories excluded
- [40 CFR 261.4(b)(1) (17)]
- Examples:
  - Household hazardous wastes
  - Agricultural wastes
  - Cement Kiln Dust
  - Used Oil Filters
  - Landfill Leachate



#### SOLID WASTES WHICH ARE NOT HAZARDOUS WASTES

Household Hazardous Waste

Agricultural Waste

Mining Overburden

Fossil Fuel Combustion Waste (Bevill)

Oil, Gas, and Geothermal Wastes (Bentsen Amendment)

**Trivalent Chromium Wastes** 

Mining and Mineral Processing Wastes (Bevill)

Cement Kiln Dust (Bevill)

Arsenical-Treated Wood

Petroleum Contaminated Media & Debris from Underground Storage Tanks

Injected Groundwater

Spent Chloroflurocarbon Refrigerants

**Used Oil Filters** 

**Used Oil Distillation Bottoms** 

Landfill Leachate or Gas Condensate Derived from Certain Listed Wastes

Project XL Pilot Project Exclusions

Project XL Pilot Project Exclusions

## NON-SPECIFIC AND SPECIFIC SOURCES THE F AND K LISTS

- The F list wastes from certain common industrial and manufacturing processes. [40 CFR §261.31].
  - E.g., Spent solvent wastes (waste codes F001 through F005)
- The K list wastes from 13 different industrial or manufacturing categories on the list. [40 CFR §261.32].
  - E.g., wood preservation, organics chemicals manufacturing, inorganic pigment manufacturing, etc





### DISCARDED COMMERCIAL CHEMICAL PRODUCTS THE P AND U LISTS

- P acute (205 chemicals)
- U toxic (411 chemicals)

#### [40 CFR 261.33]

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Commercial Products - Pure/Technical Grade

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- Formulations Sole Active Ingredient
- "Unused" Not Manufactured Article



## FOUR PROPERTIES CHARACTERISTIC HAZARDOUS WASTES

#### **IGNITABLE (D001)**

- Liquid with Flash Point < 140°F</p>
- Oxidizer

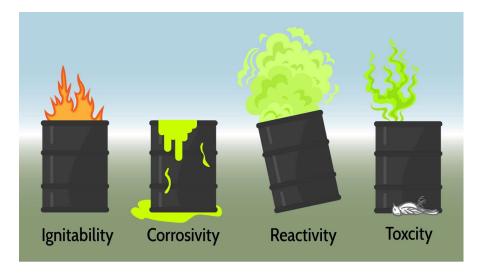
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- Ignitable Compressed Gas
- Non-liquid that Causes Fires Through:
  - Friction
  - Moisture Absorption
  - Spontaneous Chemical Changes

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#### **CORROSIVE (D002)**

- Aqueous and has a pH of  $\leq 2.0$  or  $\geq 12.5$
- Liquid and Corrodes Steel ≥ ¼ Inch/Year



## FOUR PROPERTIES CHARACTERISTIC HAZARDOUS WASTES

#### **REACTIVE (D003)**

- Normally Unstable
  - Explosives/Shock Sensitive
- Reacts Violently with Water
- Forms Potentially Explosive Mixtures with Water
- Generates Toxic Gases When Mixed with Water
- Reactive Cyanides + Sulfides
- Capable of Detonation if:
  - Subject to Strong Initiating Source
  - Heated Under Confinement
- Defined as Explosive

#### TOXIC (D004-D043)

- 39 Specific Chemicals
  - Solvent/Organic Chemicals
  - Heavy Metals
  - Pesticides
- Failed TCLP Concentrations Test
  - Simulates Migration of Chemicals in a Landfill that Could Impact Groundwater





# UNIVERSAL WASTES REGULATIONS

- Typically Hazardous Wastes
- Relaxed Regulations if Recycled
  - Fluorescent Lamps (Crushing = Treatment H.W.)
  - Lead-Acid/Ni-Cad Batteries
  - Mercury-Containing Equipment
  - Recalled Pesticides
  - Non-empty Aerosol Cans
  - Antifreeze
  - Paint-related waste
- USEPA added aerosol cans (effective February 20, 2020)

- Dated + Marked
  - "Universal Waste" or "Used" or "Waste" + Type
- Managed Prevent Leaks = <u>Closed Box</u>
- 1 Year Storage
- Training = Handling + Spill Response







## UNIVERSAL WASTE LAMPS

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UNIVERSAL WASTE FEDERAL LAW PROHIBITS IMPROPER DISPOSIL OTHER FOLLOWING MATERIALS ARE REGULATED AS UNIVERSAL WASTE IN ACCORDANCE WITH 40 OR PART 173

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UNIVERSAL WASTE RATTERY(ILS) UNIVERSAL WASTE - MERCERY THERMOSTAT(S) UNIVERSAL WASTE MERCURY CONTAINING EQUIPMENT

UNIVERSAL WASTE - PESTICIDE(S) DE UNIVERSAL WASTE . LAMPASI

HANDLE WITH CARE!

ACCEMULATION START DATE:



## LAMP BALLAST PCBS BEFORE JULY 1, 1978





## HOW TO IDENTIFY FLUORESCENT LIGHT BALLAST (FLB) WITH PCBS

- FLBs that contain PCBs are regulated under TSCA.
- Any FLBs manufactured before July 2, 1979, may contain PCBs.
- Any FLBs marked with the statement "This equipment contains PCB Capacitor(s)," in accordance with 40 Code of Federal Regulations (CFR) § 761.40(d), contain PCBs.
- In accordance with 40 CFR § 761.2(a)(4): Any person must assume that a capacitor manufactured prior to July 2, 1979, whose PCB concentration is not established, or whose date of manufacture is unknown, contains greater than or equal to (≥) 500 parts per million (ppm) PCBs.
- Any person may assume that a capacitor marked at the time of manufacture with the statement "No PCBs" in accordance with 40 CFR § 761.40(g) does not contain PCBs. 40 CFR § 761.40(g) required non-PCB ballasts manufactured from July 1, 1978, to July 1, 1998, to be labeled with the statement "No PCBs."
- If an FLB was manufactured prior to July 2, 1979, the potting material may be sampled and analyzed for PCBs or assumed to contain PCBs. The potting material in PCB FLBs manufactured prior to July 2, 1979, frequently contains concentrations of PCBs over 50 ppm. EPA generally does not recommend opening the FLBs just to sample the potting material due to the risk of PCB exposure. The disposal requirements are different for PCBs in the potting material than for the PCB small capacitors.





## **UNIVERSAL WASTE** BATTERIES

BL-6W

ON

UNIVERSAL WASTE FEDERAL LAW PROHIBITS IMPROPER DISPOSAL THE FOLLOWING MATERIALS ARE REGULATED AS A UNIVERSAL WASTE IN ACCORDANCE WITH 40 CFR PART 273. CONTRACT WASTE - BATTERY(IES) INIVERSAL WASTE - MERCURY THERMOSTAT(S) 1 - IVE .- SAL WASTE - MERCLEY CONTAINING EQUIPMENT DYTERSAL WASTE - PESTICIDE(S) STORA ASTA

ACCUP LATION START DATE.

MULTING NAME AND IN OR NA.NO. WITH PRIFIN INC., THE DURING TRANSPORT WHEN MATERIAL IN ALSO REFERENCE BY WORK PARTS 172-1861 HANDLE WITH CARE!

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NAME ADDRESS OF THE A

i-mobile MODEL: BL-193 Rechargeable Li-ion CAPACITY: 3.7V/2 CAUTIONS:

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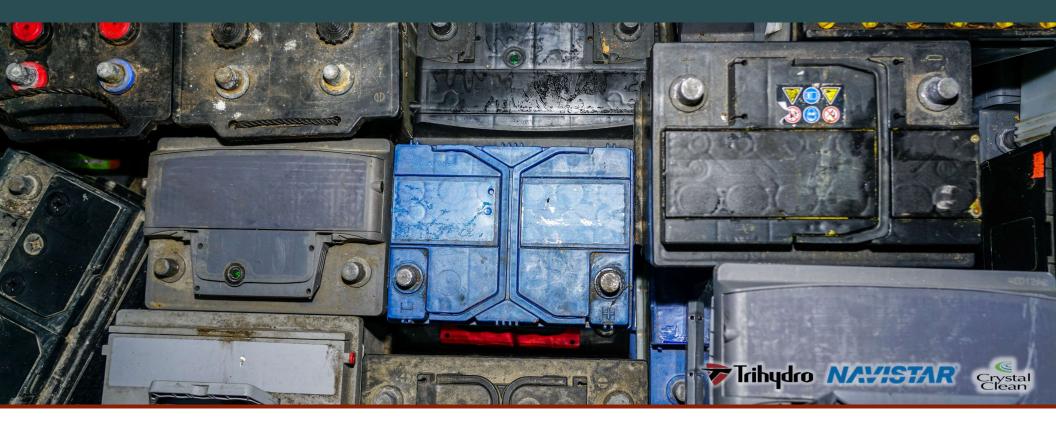
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## LEAD ACID BATTERIES



# AIR BAGS AND SEAT BELT PRETENSIONERS





### OHIO-SPECIFIC UNIVERSAL WASTE REGULATIONS (0.A.C. 3745-273-89)

- Ohio-specific universal wastes, which include the following:
  - Aerosol containers [3745-273-89(A)]
  - Antifreeze [3745-273-89(B)]
  - Paint and paint-related waste [3745-273-89(C)]





## SOLVENT CONTAMINATED WIPES EXCLUDED





## **UNIVERSAL WASTE AEROSOL CANS OHIO-SPECIFIC UNIVERSAL WASTE AEROSOL CANS** Dept. All MAINTENANCE Date Accumulation began 6-8-2/ DATE Accumulation Crescal Irihudro NAUSTAR Crysta

## OHIO-SPECIFIC UNIVERSAL WASTE PAINT

- Ohio give examples for labels
  - UW paint
  - Paint waste
  - Recyclable paint
  - Paint rags
  - Used paint stripper
  - Used paint blast

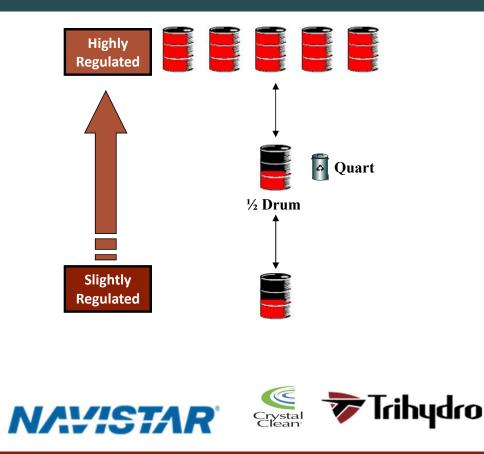




# **KNOW YOUR GENERATOR STATUS!**

- Large Quantity Generator (LQG)
  - >2,200 lbs./Month
  - >2.2 lbs./Month Acute Hazardous
- Small Quantity Generator (SQG)
  - 220 lbs. > per Month < 2,200 lbs.
  - 13,200 lbs. Maximum on Site
- Conditionally Exempt SQG (CESQG)
  - < 220 lbs. per Month</p>
  - < 2.2 Ibs. Acute Hazardous (P) Waste
  - 2,200 lbs. Maximum on Site

**Episodic Generator (Multiple Status Different Months)** 



# HAZARDOUS WASTE GENERATOR REQUIREMENTS

	LQG	SQG	VSQG
Waste Determination			
DOT Shipping Requirements			
On Site Storage	90 Days	180/270 Days < 13,200 Lbs Max	< 2,200 Lbs
Container/Tank Marking & Labeling	<b>1</b>		Not Required
Weekly Accumulation Area Inspections			Not Required
<b>EPA ID Number</b>			Optional
Formal Written Training Program		Not Required (Awareness)	Not Required
<b>Contingency Plan</b>		Not Required	Not Required
<b>Bi-Annual Waste Report</b>		Not Required	Not Required





# **EPISODIC GENERATION**

- Benefits facilities with occasional temporary surge in hazardous waste generation
- Allows generator to retain existing (VSQG, SQG) category during episodic generation, provided they comply with a streamlined set of requirements
  - Allows one planned episodic event per year
  - Can petition for second (unplanned) event
  - Must notify EPA at least 30 days in advance (or within 72 hours for unplanned episode)
  - Must complete the episodic event within 60 days (all waste shipped offsite)

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## CONTINUED EPISODIC GENERATION

- VSQG streamlined requirements: comply with SQG waste management provisions and maintain records
  - Obtain EPA ID Number
  - Use hazardous waste manifest and transporter to ship to RCRA TSDF or recycler
  - Manage in a way that minimizes potential for accident or release
  - Label episodic waste containers
    - "Episodic Hazardous Waste"
    - Identify hazards of contents
  - Identify an emergency coordinator at the generator facility
  - Maintain records of episodic event



## CONTINUED EPISODIC GENERATION

- SQG requirements:
  - Comply with existing SQG regulations
  - Use hazardous waste manifest and transporter to ship to RCRA TSDF or recycler
  - Label episodic waste containers
    - "Episodic Hazardous Waste"
    - Identify hazards of contents
  - Maintain records of episodic event
- All conditions must be met to retain the episodic generation conditional management benefit





# NOTIFICATION/RECORDKEEPING

- SQG required to re-notify every 4 years
- LQG Biennial Report (Federal) and Annual (State) rules updated to be consistent with current guidance
  - LQGs must report all hazardous waste generated in a calendar year, even when it is managed the next year
  - LQGs must report for all months in the year, even if SQG for some of those months
  - LQGs must report hazardous waste recycled onsite
  - Recycling facilities must report wastes that are not stored prior to recycling





# LABELING AND STORAGE REQUIREMENTS

- Applies to all SQGs, LQGs, Transporters
- Label must indicate
  - The words "Hazardous Waste"
  - Identification of hazards NEW
    - Can use any of several established methods to indicate hazards (DOT, OSHA, NFPA, pictogram, RCRA characteristic...)
  - All waste codes (prior to shipment) NEW
    - May use recognized electronic option (e.g., bar codes)
    - Exception for lab packs
  - Accumulation start date
- For vessels that can't be labeled (some tanks, drip pads, containment buildings, ...)
  - Info can be in records or logs kept near to location of the vessel

	WASTE
IF FOUND CONTACT	AW PROHIBITS IMPROPER DISPOSAL TTHE NEAREST POLICE OR PUBLIC SAFETY EU.S. ENVIRONMENTAL PROTECTION AGENCY INTOR
ADDRESS	PHONE
CITY EPA / MANIFEST ID NO. / DOCUMEN ACCUMELATION	STATE
START DATE	WASTE NO.



# SATELLITE ACCUMULATION PROVISIONS

- New section: 40 CFR Specific clarification that hazardous wastes in Satellite Accumulation Areas (SAA) cannot be mixed or placed in a container with other incompatible hazardous wastes
- Containers in SAA are allowed to remain open under limited circumstances
  - When necessary for safe operations (limited exception)
- Clarifies that the three-day requirement to move containers from SAA to central accumulation area means three calendar days
- For acute hazardous waste, can consider max weight or volume
- Marking and labeling consistent with central accumulation areas



#### SATELLITE ACCUMULATION AREA (SAA)

#### **INDICATE HAZARDS ON CONTAINER**





# **USED OIL REGULATIONS**

- Used Oil (Lubrication)
  - Refined from Crude/Synthetic
  - Used or Contaminated from Use
- < 1,000 ppm Halogens</p>
- No Hazardous Waste Mixtures
- Mark Containers/Tanks "Used Oil"
- Managed In Drums/Tanks
  - No Severe Rust/Structural Defects
  - No Visible Leaks (Lids Closed)
  - No Exposure to Rainwater



### **MUST BE RECYCLED**



#### **USED OIL FILTER** WITH HOLES, SET IN FUNNEL TO TRAIN



#### HAZARDOUS WASTE NON-EMPTY CONTAINERS OF IGNITABLE MATERIAL





### **RCRA EXEMPT FUEL**

- The Fuel to Fuel (FTF) provision exempts materials that are burned for energy recovery or contained in fuels, if they are themselves fuels.
- Off-spec fuel (e.g., "bad" gasoline) sent for fuel blending.
- Fuel tank bottoms sent for fuel blending.
- Fuel/water mixtures sent for fuel blending
- Aerosol can propellants captured and burned for energy recovery
- Must be burned for energy recovery, not incinerated
- If off-spec fuel is legitimately reclaimed, it is not a solid waste, so don't need to invoke the FTF exemption



### **EMERGENCY PREPAREDNESS**

- LQG Contingency Plans must have a "quick reference guide" with most critical information
- Contents of "quick reference guide"
  - Types and amounts of hazardous waste
  - Maps of site and surrounding area
  - Location of water supply
  - Identification of notification system (phones, PA, etc.)
  - Emergency contact(s)
- Who must submit
  - Any new LQG with their first Contingency Plan
  - Any existing LQG, at the first revision of the Contingency Plan following effective date of the regulation



#### CONTINUED EMERGENCY PREPAREDNESS

- LQG Contingency Plan Emergency Coordinator information
  - No longer required to include certain personal contact information
  - Where 24/7 Emergency Coordinator is available on-site, may list the position(s) rather than employee names
- Clarifies where and what emergency equipment is required
  - Must address all areas where hazardous waste is generated and/or managed
- May use CBT/electronic training for personnel training
- Document that emergency arrangements have been attempted with local authorities
  - Not required to have something back from local authorities, just document that you attempted to make arrangements
  - Waiver option for facilities with on-site response capabilities



## **SHIPPING - Comply with 49 CFR**

- Determining whether a material meets the definition of a "hazardous material"
- Employee training
- Proper shipping name
- Class/division
- Identification number
- Hazard warning label
- Packaging

#### Training can be online

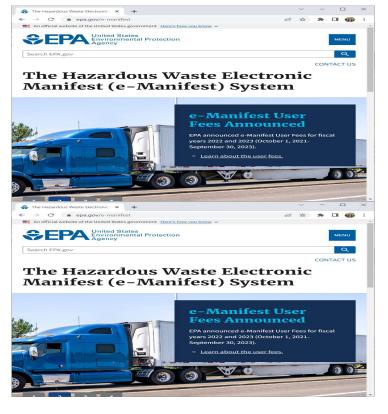
- Marking and labeling
- Shipping papers
- Certification
- Compatibility
- Blocking and bracing
- Placarding
- Security Plans
- Incident Reporting
- Emergency response information
- Emergency response telephone number



## **E-MANIFESTS**

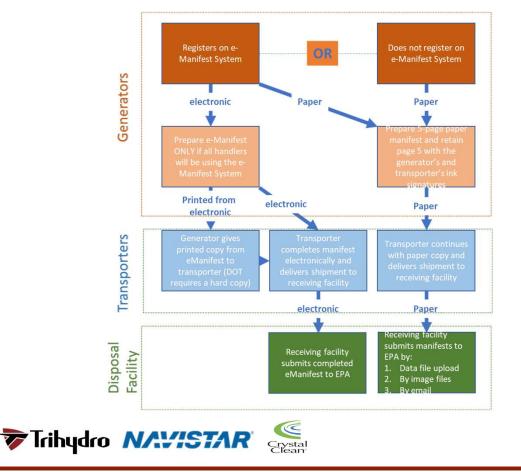
- EPA launched e-Manifest tracking system on June 30, 2018
- National electronic manifest tracking system
- Receiving charged fees to cover cost to develop/operate (EPA updates fees every 2 years):
  - \$20 Scanned image & upload
  - \$13- Manifest data plus image upload
  - \$8 Electronic manifest (fully electronic & hybrid)
- Generators need to register for e-Manifest if they wish to sign manifests electronically, view records or submit corrections

As of June 30, 2021, EPA no longer accepts mailed paper manifests. Instead, receiving facilities must submit paper manifests as either a scanned image upload or data plus image upload.





# FLOW ON MANIFESTS/E-MANIFEST





LQG must contact the transporter and/or destination facility if the final copy from the destination facility is not reveived within 35 days, that site to check the status of its shipment.

If the final, signed manifest does not arrive within 45 days, the generator must file an exemption report with the EPA.

SQGs who do not receive a final, signed copy within 60 days must file an exemption report.

Sites must keep each manifest for three years from the date that the initial transporter accepted the waste for shipment.

### REPORTING

- LQG Reporting Requirements
  - March 1 of each even-numbered year, submit biennial report. (also serves as renotification of waste generator activities)
- SQG Reporting Requirements
  - Re-notify EPA of their waste generator activities every four years thereafter using the same form by September 1 of the year in which re-notifications
  - SQG must notify EPA of an episodic event no later than 30 calendar days prior to a planned event or within 72 hours of an unplanned event.
- VSQG Reporting Requirements
  - Must obtain an EPA ID Number and notify EPA no later than 30 calendar days prior to a planned event or within 72 hours of an unplanned event.



## **BIENNIAL REPORTING**

- Biennial Report requires the following information to be submitted:
  - quantity of hazardous waste generated,
  - hazardous waste characteristics, and
  - hazardous waste management (on-site and for waste shipped off-site).
- Some States require Annual Reporting (e.g., IN)
- The Biennial Report includes:
  - Site Identification (Site ID) form
  - Waste Generation and Management (GM) forms
  - Waste Received From Off-Site (WR) forms (if required), and
  - Off-Site Identification (OI) Forms (if required).
- Most States all forms can be completed electronically in RCRAInfo



## **FINAL THOUGHTS**

- Don't assume that just because a material doesn't look like a hazardous waste means that it isn't a hazardous waste.
- Be on the lookout for:
  - Virgin product storage areas.
  - Labs.
  - Returned products.
- Discontinued processes, unused portions of buildings.
- Document how you determined the identity of a waste.
- Don't fall into the trap of "it's an unused product, so it can't be a waste."

- Document legitimate use/reuse or recycling.
- Consider the possibility of sham recycling.
- Know your Generator Status and keep a close eye on wastes generated. Episodic events must be unique and discrete.
- Keep training up to date and keep records.





## **QUESTIONS**



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#### TIM MCDANIEL, CIH, CSP

Environmental, Health and Safety Manager Navistar Springfield Assembly Plant





ANITA DECINA VP of Operational Safety & Environmental Excellence Heritage-Crystal Clean, LLC



#### **Biographical Information**

#### Tim W. McDaniel, CIH, CSP, EH&S Manager, Navistar Inc. 6125 Urbana Rd., PO Box 600, Springfield, OH 45502-9279 tim.mcdaniel@navistar.com

Tim McDaniel is the Environmental, Health and Safety Manager at Navistar's Springfield Assembly Plant. In this capacity he manages all environmental, and sustainability issues. He has been with Navistar at the Springfield operations since 1989 and has worked in the EHS field for 38 years. Tim has worked to advocate smart changes in environmental regulations that provide manufacturing flexibility without compromising sound environmental principles.

Tim serves on the Clark County Solid Waste Management District Policy Committee and Local Emergency Planning Committee. He is the past chairman of the Truck Manufacturers' Association Environmental Management Committee and the Ohio Manufacturers' Association Environmental Committee and was a board member of the Great Lakes Regional Pollution Prevention Roundtable.

Tim received his master's degrees in environmental science and in biology from Indiana University and a bachelor's degree in environmental resources from Eastern Kentucky University.

Tim's favorite hobby is running and has two marathons planned for 2022 – Boston and Berlin.

#### Rajib Sinha, P.E., Senior Engineer/Project ManagerTrihydro Corporation, 2702 Kemper Road, Cincinnati, OH 45241513.429.7456Mobile: (513) 604-8940RSinha@Trihydro.com

Mr. Sinha is a Chemical Engineer and Project Manager with over 30 years of experience in Environmental Consulting and Engineering. Mr. Sinha has provided a wide array of services to industry for compliance with various laws. For eight years, Mr. Sinha led a team of engineers, geologists, scientists, and administrative staff that provided environmental compliance, safety, and Industrial Hygiene services to commercial facilities and governmental clients. This includes projects conducted under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA); Resource Conservation and Recovery Act (RCRA); Superfund Amendments and Reauthorization Act (SARA); Bureau of Underground Storage Tank Regulations (BUSTR). Mr. Sinha has designed and implemented several systems for treating contaminated groundwater and industrial wastewater and assisted several clients in complying with provisions of the National Pollutant Discharge Elimination System (NPDES) under the Clean Water Act (CWA). He has coordinated his work activity with various disciplines and clients.

Mr. Sinha has also served as the Project Leader for research projects at the U.S. Environmental Protection Agency (USEPA) Test & Evaluation (T&E) Facility in Cincinnati, OH. He directs research related to providing safe drinking water with a particular emphasis on systems serving small communities without access to public drinking water systems. Other current projects include development of innovative retrofit devices for stormwater management and watershed management research. Mr. Sinha also develops and manages third-party commercial projects at the T&E Facility. Mr. Sinha has made numerous presentations in conferences as well as published papers in peer-reviewed journals.

Mr. Sinha holds a Bachelor of Technology in Chemical Engineering (Jadavpur University), Master of Science in Chemical Engineering (University of Southern California), and a Master of Business Administration (University of Cincinnati).

#### **Biographical Information**

#### Anita Decina, Vice President, Operational, Safety & Environmental Excellence Heritage-Crystal Clean, LLC 2000 Center Drive, Suite East C300, Hoffman Estates, IL 60192 847.783.5924 Anita.Decina@Crystal-Clean.com

Ms. Anita Decina is Heritage-Crystal Clean's Vice President of Operational, Safety, & Environmental Excellence. She is responsible for ensuring regulatory compliance, worker safety, and transportation compliance across our nation-wide network of branches, wastewater treatment plants, recycle centers, and solid waste processing facilities. She leads a talented team of environmental compliance, health and safety, and DOT safety compliance professionals. Her team has led the implementation of multiple safety and compliance programs resulting in increased compliance and improved environmental sustainability practices.

HCC provides full-service solvent and aqueous parts cleaning, containerized waste management, used oil collection and re-refining, vacuum truck services, wastewater treatment, and closed loop antifreeze recycling for its customers. HCC interacts not only within our own service operations but with multiple generators, transporters, receiving facilities, landfills, incinerators and a variety of other treatment and disposal facilities.

Ms. Decina is responsible for ensuring regulatory compliance, worker safety, and transportation compliance. Her team has led the implementation of multiple safety and compliance programs resulting in increased compliance and improved environmental sustainability practices.

Ms. Decina joined Crystal Clean in 2000 and has held several roles related to EHS and DOT compliance. She was part of a team that established Heritage-Crystal Clean's Environmental Solutions Partners Program and has worked with federal and state regulators to establish a positive, transparent working relationship.

Ms. Decina holds a Bachelor of Science in Business Administration from Central Michigan University.